

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of detecting a packet comprising:
sampling a received signal to produce a sequence of samples wherein the sequence of samples includes a plurality of subsequences of samples;
cross correlating each of the subsequences of samples with a known form of the subsequence to produce at least one cross correlation for each of the plurality of subsequences of samples, wherein the known form of the subsequence is adjusted in sign according to a pseudorandom sequence;
self correlating the cross correlations to produce a plurality of self correlations; summing the self correlations, including adjusting the sign of each of the self correlations according to a known sequence that corresponds to the pseudorandom sequence; and
detecting a packet at least in part by processing the sum of the self correlations;
wherein processing the sum of the self correlations includes comparing for a period of time the magnitude of the sum of the self correlations to a first threshold and summing the sums of the self correlation whose magnitudes exceed the first threshold and comparing the magnitude of summed sums to a second threshold.
2. (Original) A method of detecting a packet as recited in claim 1 wherein processing the sum of the self correlations includes comparing the magnitude of the sum of the self correlations to a threshold.
3. (Cancelled)
4. (Currently Amended) A method of detecting a packet as recited in claim 1 comprising:
sampling a received signal to produce a sequence of samples wherein the sequence of samples includes a plurality of subsequences of samples;
cross correlating each of the subsequences of samples with a known form of the subsequence to produce at least one cross correlation for each of the plurality of subsequences of samples, wherein the known form of the subsequence is adjusted in sign according to a pseudorandom sequence;

self correlating the cross correlations to produce a plurality of self correlations;
summing the self correlations, including adjusting the sign of each of the self correlations
according to a known sequence that corresponds to the pseudorandom sequence; and
detecting a packet at least in part by processing the sum of the self correlations;
wherein processing the sum of the self correlations includes comparing for a period of time the magnitude of the sum of the self correlations to a first threshold and summing magnitudes of the sum of the self correlation that exceed the first threshold and comparing the summed magnitudes to a second threshold.

5. (Currently Amended) A method of detecting a packet ~~as recited in claim 1 comprising:~~
sampling a received signal to produce a sequence of samples wherein the sequence of samples includes a plurality of subsequences of samples;
cross correlating each of the subsequences of samples with a known form of the subsequence to produce at least one cross correlation for each of the plurality of subsequences of samples, wherein the known form of the subsequence is adjusted in sign according to a pseudorandom sequence;
self correlating the cross correlations to produce a plurality of self correlations;
summing the self correlations, including adjusting the sign of each of the self correlations
according to a known sequence that corresponds to the pseudorandom sequence; and
detecting a packet at least in part by processing the sum of the self correlations;
wherein processing the sum of the self correlations includes comparing for a period of time the greater of the magnitude of the real part of the sum of the self correlations and the magnitude of the imaginary part of the sum of the self correlations to a first threshold and summing greater of the real magnitude and the imaginary magnitudes of the sum of the self correlation that exceed the first threshold and comparing the summed magnitudes to a second threshold.

6. (Original) A method of detecting a packet as recited in claim 1 wherein processing the sum of the self correlations includes comparing for a period of time the magnitude of the sum of the self correlations to a first threshold and summing magnitudes of the sum of the self correlation that exceed the first threshold and comparing the summed magnitudes to a second threshold.

7. (Original) A method of detecting a packet as recited in claim 1 wherein processing the sum of the self correlations includes determining a frequency offset from the phase of the sum of the self correlations.
8. (Original) A method of detecting a packet as recited in claim 1 wherein processing the sum of the self correlations includes determining a packet boundary based on the time when the sum of the self correlations is determined to be a maximum.
9. (Cancelled)
10. (Original) A method of detecting a packet as recited in claim 1 wherein summing the self correlations includes adjusting the sign of the self correlations according to a pseudorandom sequence.
11. (Original) A method of detecting a packet as recited in claim 1 further including resetting the sum of the self correlations to zero upon the occurrence of an automatic gain control adjustment.
12. (Original) A method of detecting a packet as recited in claim 1 further including resetting upon the occurrence of an automatic gain control adjustment.
13. (Original) A method of detecting a packet as recited in claim 1 further including determining a frequency offset from the angle of the sum of the self correlations.
14. (Previously Presented) A method of detecting a packet as recited in claim 1 further including rescaling the received signal to reduce the number of bits required for cross correlation and self correlation.
- 15-19. (Cancelled)
20. (Currently Amended) A receiver configured to detect a packet comprising:
 - an ADC configured to sample a received signal to produce a sequence of samples wherein the sequence of samples includes a plurality of subsequences of samples;
 - a cross correlator configured to cross correlate each of the subsequences of samples with a known form of the subsequence to produce at least one cross correlation for each of the plurality of subsequences of samples, wherein the known form of the subsequence is adjusted in sign according to a pseudorandom sequence;
 - a self correlator configured to self correlate the cross correlations to produce a plurality of self correlations;

an adder configured to sum the self correlations, including adjust the sign of each of the self correlations according to a known sequence that corresponds to the pseudorandom sequence; and

a processor configured to detect a packet at least in part by processing the sum of the self correlations;

wherein processing the sum of the self correlations includes comparing for a period of time the magnitude of the sum of the self correlations to a first threshold and summing the sums of the self correlation whose magnitudes exceed the first threshold and comparing the magnitude of summed sums to a second threshold.

21-24. (Cancelled)